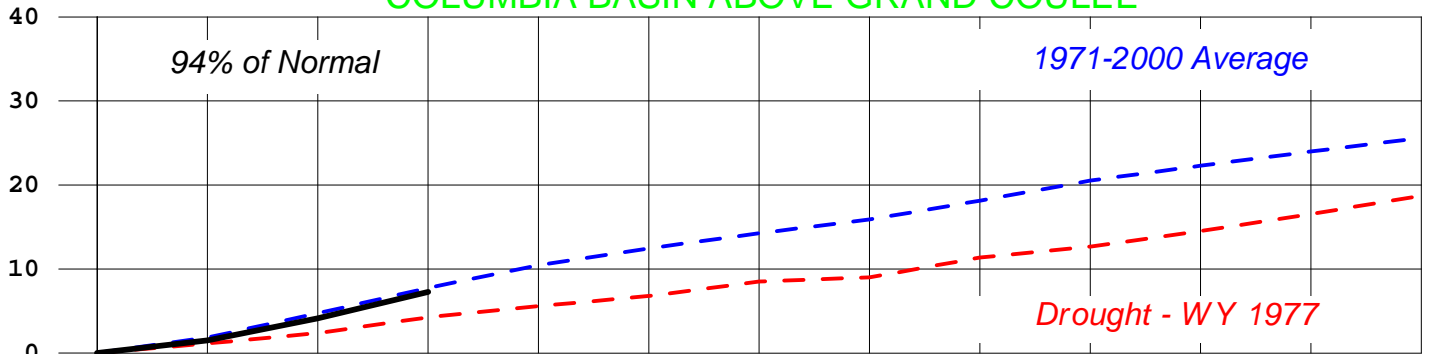
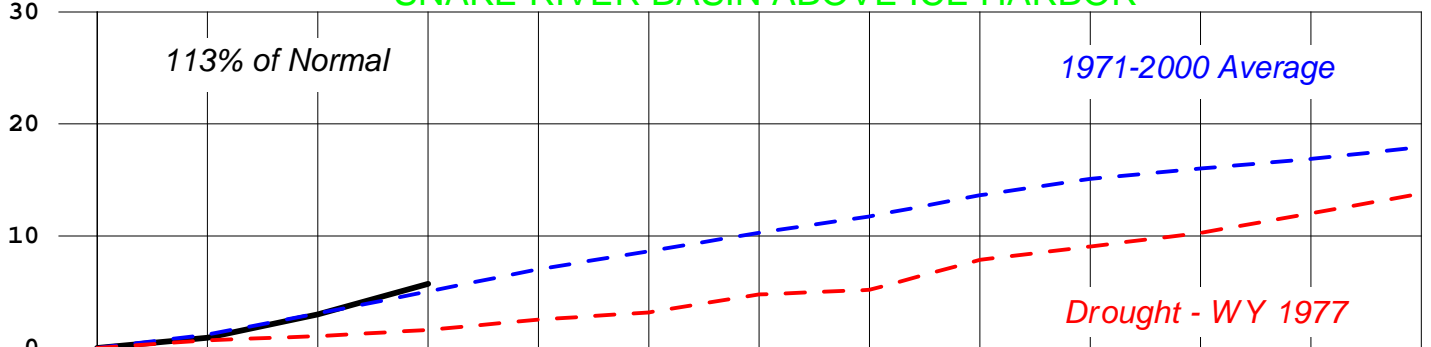


CUMULATIVE PRECIPITATION
WATER YEAR 2009

COLUMBIA BASIN ABOVE GRAND COULEE



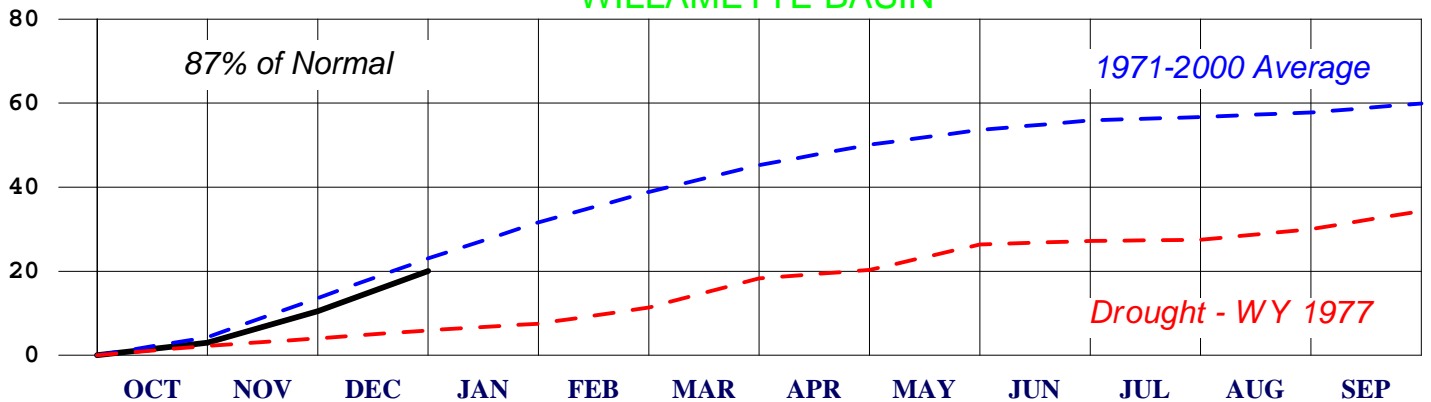
SNAKE RIVER BASIN ABOVE ICE HARBOR



COLUMBIA BASIN ABOVE THE DALLES



WILLAMETTE BASIN



in the month.

Precipitation normals are based on 1971-2000 historical data.

Please contact NWRFC for further information: (503) 326-7291.

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Monthly Divisional Precipitation Summary

Click on date to display forecast:

12/2008 Select Date

Columbia Basin Seasonal Precipitation Division Averages Northwest River Forecast Center

(Monthly Summary - 20)

DIVISION	..DEC TO DAY 31..			OCT - DEC....			
	OBSD	DEP	PCT	AV	OBSD	DEP	PCT	AV
COLUMBIA ABOVE COULEE	3.12	0.10	103.		7.26	-0.49	94.	
SNAKE RV AB ICE HARBOR	2.72	0.75	138.		5.72	0.67	113.	
COLUMBIA AB THE DALLES	3.21	0.23	108.		7.42	-0.05	99.	
COLUMBIA AB CASTLEGAR	4.00	-0.29	93.		10.98	-0.14	99.	
KOOTENAI	3.08	-0.08	97.		6.94	-1.16	86.	
CLARK FORK	2.54	0.73	141.		5.45	0.75	116.	
FLATHEAD	2.96	0.51	121.		5.97	-0.57	91.	
PEND OREILLE/ SPOKANE	4.23	0.02	100.		8.77	-1.73	84.	
NORTHEAST WASHINGTON	2.67	0.29	112.		5.71	-0.04	99.	
OKANOGAN	1.66	-0.32	84.		4.21	-0.55	88.	
EAST SLOPES WASH CASC.	5.63	-1.54	79.		14.47	-2.07	88.	
CENTRAL WASHINGTON	1.08	-0.26	80.		2.65	-0.51	84.	
UPPER SNAKE	2.94	0.80	138.		6.76	1.16	121.	
SNAKE RIVER PLAIN	1.27	0.25	125.		3.38	0.42	114.	
OWYHEE/ MALHEUR	1.65	0.42	134.		3.63	0.46	115.	
SALMON/ BOISE/ PAYETTE	3.13	0.50	119.		5.96	-0.32	95.	
BURNT/ GRANDE RONDE	2.59	0.65	133.		4.82	-0.15	97.	
CLEARWATER	4.52	0.98	128.		10.27	0.94	110.	
SOUTHEAST WASHINGTON	3.21	0.82	134.		6.20	-0.18	97.	
UPPER JOHN DAY	2.24	0.50	129.		4.27	-0.20	96.	
UMATILLA/ LWR JOHN DAY	3.31	1.40	173.		5.51	0.27	105.	
UPR DESCHUTES/ CROOKED	2.80	0.76	137.		4.96	0.00	100.	
HOOD/ LOWER DESCHUTES	5.96	1.33	129.		12.10	1.02	109.	
NW SLOPE WASH CASCADES	10.77	-2.46	81.		29.80	-4.56	87.	
SW WA CASCADES/COWLITZ	9.52	-1.56	86.		24.36	-3.30	88.	
WILLAMETTE VALLEY	9.59	0.15	102.		20.03	-3.02	87.	
ROGUE/ UMPQUA	7.77	2.05	136.		13.81	-0.25	98.	
KLAMATH BASIN	3.53	0.67	123.		6.50	-0.15	98.	
LAKE COUNTY-GOOSE LAKE	1.37	-0.05	97.		2.71	-1.01	73.	
HARNEY/ MALHEUR BASIN	1.35	0.08	106.		3.17	-0.11	97.	

Columbia River Basin division values are computed by utilizing un-weighted precipitation amounts from key stations in each area.

Precipitation normals are based on 1971-2000 historical data.

Please contact NWRFC for further information: (503) 326-7291.

NORTHWEST RIVER FORECAST CENTER PORTLAND OR !

PRECIPITATION, TEMPERATURE, SNOW, AND STREAMFLOW SUMMARIES !

Dec 08

WEATHER SUMMARY !

December had below normal precipitation and temperatures amounts.

December started with fairly benign weather...but this quickly changed for much of the Pacific Northwest. a very strong and cold low pressure system brought snow and strong winds to much of the northwest over the second week of December. a cold...stormy pattern continued to bring snow and ice to much of the region through Christmas. after Christmas... a few warm frontal systems brought additional precipitation that helped to melt most of the valley snow by the end of the year. The month of December had numerous record coldtemperatures along with record snowfall amounts.

PRECIPITATION SUMMARY !

Seasonal (October through December) precipitation was: 91 percent of normal(1971-2000) at Columbia above Coulee, 114 percent of normal at the Snake River above Ice Harbor, and 99 percent of normal at Columbia above the Dalles.

TEMPERATURE SUMMARY

The 31 station temperature index for the Pacific Northwest

departed -2.0 degrees from normal relative to the 1971-2000 normals.

Meantemperature departures ranged from -7.3 to 3.2 degrees.

General Summary !

Fall weather was somewhat dry and warm with little snow accumulation until the last half of December. Heavy snow over most of the basin brought snow waterequivalents (SWE's) from 20 to 50 percent to 60 to 130 percent by months end.Seasonal precipitation is at 90 to 130 percent in the major sub basin areas.This points to a slightly below average streamflow forecast for the Columbia River at The Dalles.

Snow Summary !

Several snow producing storms at the end of December produced abrupt increases in SWE's basinwide. As of the end of December the best snow conditions are on the Snake River at 90 to 100 percent. In the area above Grand Coulee Dam the end of December SWE's range from 60 to 80 percent. The exception is the Clark Fork and Bitterroot Rivers where SWE's are near average. West of the Cascades end of December SWE's were 75 percent in the north Cascades in Washington and 115 percent in the Oregon Cascades.

Streamflow Summary !

Streamflow were generally below average through the early Fall at 60 to 90 percent of average. In November a series of moisture laden storms brought moderate to major flooding to Western Washington and to some coastal basins in Oregon. Spill over flooding also happened on the Stehekin, Wenatchee and Yakima Rivers in Eastern Washington. At the end of December some

minor floods hit Northwest and Southwest Oregon. Columbia River streamflows ranged from 40 to 90 percent of the thirty year average. Sharp cooling at the end of December caused many frozen rivers in areas East of the Cascades.

The forecast streamflows for the January 1st analysis range from 60 to 90 percent in the Middle and Upper Snake basins to near average in most of the areas above Grand Coulee Dam on the Columbia River. West of the Cascades the streamflow forecasts are near average. The January-July forecast for the Columbia River at The Dalles is slightly below average.

http://www.nwrfc.noaa.gov/water_supply/ws_fcst.cgi
has detailed water supply forecasts.

MONTHLY PRECIPITATION AND TEMPERATURE RECORDS !

Partial list of record high and low temperatures in degrees (F) are listed below. Precipitation is reported in inches. Please see the complete list of records at the National Weather Service Field Offices Climatology Web pages.

Below are several of the December 2008 Records:

DEC 07 A RECORD HIGH TEMPERATURE OF 45 DEGREES WAS SET AT STANLEY ID

DEC 14A RECORD SNOWFALL OF 2.4 INCHES OCCURRED AT PENDLETON AIRPORT

DEC 14 A RECORD LOW TEMPERATURE OF -11 DEGREES WAS SET AT HUNGRY H

A RECORD LOW TEMPERATURE OF -10 DEGREES WAS SET AT POLSON MT

DEC 15 A RECORD LOW TEMPERATURE OF -21 DEGREES WAS SET AT ANACONDA MT
DEC 15 A RECORD SNOWFALL OF 2.7 INCHES WAS SET AT MEDFORD OR
DEC 15 A RECORD LOW TEMPERATURE OF 23 DEGREES WAS SET AT SEATTLE WA WFO

DEC 16 A RECORD LOW TEMPERATURE OF -11 DEGREES WAS SET AT MCCALL ID
A RECORD LOW TEMPERATURE OF -6 DEGREES WAS SET AT ROME OR
DEC 16 RECORD LOW TEMPERATURES

RECORD

BEND(CITY), OR	-4
CONDON, OR	-5
ELGIN, OR	-12
HERMISTON 2NW, OR	-10
MADRAS 2N, OR	-4
PENDLETON(CITY), OR	-8
PRINEVILLE, OR	-4
REDMOND, OR	-12

DEC 16 A RECORD SNOWFALL OF 3 INCHES WAS SET AT POCATELLO ID
DEC 16 A RECORD LOW TEMPERATURE OF 20 DEGREES WAS SET AT SEATTLE WA WFO

DEC 17 A RECORD LOW TEMPERATURE OF -22 DEGREES WAS SET AT BURNS OR
DEC 17 A RECORD LOW TEMPERATURE OF -5 DEGREES WAS SET AT KLAMATH FALLS OR
DEC 17 RECORD LOW TEMPERATURES

RECORD

CONDON, OR	-5
HERMISTON 2NW, OR	-9
MADRAS 2N, OR	0
WHITMAN MISSION, WA	-10

DEC 17 A RECORD SNOWFALL OF 17 INCHES WAS SET AT SPOKANE WA INTL A
DEC 17 A RECORD SNOWFALL OF 25.0 INCHES WAS SET AT COEUR D'ALENE ID
DEC 17 A RECORD LOW TEMPERATURE OF 10 DEGREES WAS SET AT EUGENE OR

DEC 18 A RECORD SNOWFALL OF 10.8 INCHES WAS SET AT KALISPELL MT

DEC 18 A RECORD SNOWFALL OF 10.8 INCHES WAS SET AT SPOKANE WA INTL AIRPORT

DEC 19 A RECORD SNOWFALL OF 5 INCHES WAS SET AT KELLOGG ID

DEC 20 A RECORD LOW TEMPERATURE OF -21 DEGREES WAS SET IN WINTHROP W.

 A RECORD LOW TEMPERATURE OF -18 DEGREES WAS SET AT SPOKANE WA INTL AII

DEC 22 A RECORD SNOWFALL OF 4.7 INCHES WAS SET AT BOISE ID

DEC 22 A RECORD SNOWFALL OF 2.2 INCH(ES) WAS SET AT LEWISTON ID AIRPORT

DEC 22 A RECORD SNOWFALL OF 3.4 INCHES WAS SET AT MISSOULA MT

DEC 22 NEW DAILY RECORD HIGH SNOWFALL FOR DECEMBER 22ND.

CONDON, OR	2.5
HEPPNER, OR	4.0
HERMISTON 2NW, OR	7.0
MADRAS 2N, OR	7.0
MORO, OR	1.5
PENDLETON(ES), OR	3.0
KENNEWICK, WA	2.0
WHITMAN MISSION, WA	5.7

DEC 27 A RECORD SNOWFALL OF 4.2 INCHES WAS SET AT BOISE ID

DEC 28 A RECORD RAINFALL OF 0.33 INCHES WAS SET AT BUTTE MT

US Dept of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
Northwest River Forecast Center (NWRFC)
5241 NE 122nd Avenue
Portland, Oregon 97230-1089
Telephone: 503-326-7401

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